National Aeronautics and Space Administration

Roundup

Lyndon B. Johnson Space Center

August 2009

Writing the History Books of Tomorrow

JSC Director

NASA PHOTO S125-E-007221

On the cover:

A montage of various Constellation Program projects in the making, mixed with artist renderings of future exploration concepts.

NASA PHOTO wstf0609e06934

Photo of the month:

The Orion Launch Abort System (LAS) Demonstrator was featured in a victory parade on June 25 in El Paso, Texas, honoring Socorro High School winning the Texas state 1-5A baseball championship. Orion engineer Sergio Lucero, a Socorro High School graduate, attended the event and presented a NASA plaque to the team. The Orion LAS Pathfinder was also included in the celebration parade.

NASA PHOTO

I recently had the opportunity to look over our safety and health progress through the middle of 2009. I want to offer my sincerest appreciation for your continued vigilance in making Johnson Space Center the safest center in the agency. I'd like to emphasize what makes us successful: ***We each need to communicate our safety and health concerns; be an example of safe behavior; work to find the safest way to accomplish our mission; and learn from each mishap to prevent the next.***

I am heartened by the vitality of our Close Call reporting process. We routinely lead the agency in Close Call submittals, and that's a good thing. Quite simply, many observant reports from you mean a lot of prevention opportunities. Reports run from potential injuries that did not happen to minor property-damage incidents. These issues may not have been investigated had it not been for your diligence in notifying the proper authorities. Recent analysis shows that your efforts have prevented serious electrical, fire and pedestrian-related mishaps from occurring this year.

Some have heard me say that I do not care about metrics. To clearly state, I do not want a situation where metrics become more important than the people. By reporting, you give us the chance to address safety concerns and measure our effectiveness. In reviewing the Close Call metrics, we have obtained 92 percent first-time acceptance of closure rationale directly from each submitter. That means we've been taking the time to understand the issue and get it resolved with those concerned firsthand. We have seen a decrease in the number and costs of incidents at the center, so please continue reporting safety concerns. At JSC, we are analysts by nature. We can make smarter decisions by knowing where we need to focus our efforts.

While we are generally successful at working safely, we are still suffering preventable mishaps. On average, at least one person each month is hurt seriously enough to affect his or her daily routine and work. One person hurt is too many, particularly when it could be easily avoided. Approximately two-thirds of our most significant injuries were fall-related, with inattention a principal factor. I appreciate the focus we put on the mission, but we must concentrate on getting there safely. No work-related goal is more important than what is right in front of you at any given moment, whether it is driving to and from work, rushing to a meeting, dealing with family matters or watching out for your coworker.

This year, we started a new campaign to celebrate individual safety contributions. The "Safe, Not Sorry" program is intended to recognize people at JSC who make it an everyday habit to take care of themselves and their coworkers. The vast majority of "Safe, Not Sorry" recipients individually confronted an unsafe act or corrected an unsafe condition. Several were credited with lifesaving efforts. It is truly inspiring how these folks demonstrated courage to influence our behaviors and take action. They teach us all how to build on the JSC safety and health culture.

Throughout 2009, many efforts have exemplified our cooperative spirit in meeting everyday institutional safety challenges. Among the highlights: the Mission Operations folks worked proactively to prevent suspended-load issues underwater at the Neutral Buoyancy Lab; Center Operations worked to ensure safe conduct of facility electrical repairs to support STS-125; and Engineering celebrated 15 years without a significant mishap in the Energy Systems Test Area. Several other organizations also achieved significant milestones in preventing mishaps. It's not just the longevity of the milestones that is impressive, but the spirit we display celebrating safety as a regular part of business.

You have my support to do the right thing to prevent a mishap, whether it's your own or someone else's. The most significant contributor to the NASA mission is you. By being safe here, at home and wherever life takes you, you will be back here to contribute. Thank you for your help, and keep it up!

Mike

Charlie Bolden and **Lori Garver** Confirmed by U.S. Senate

Charlie Frank Bolden Jr. was confirmed by the U.S. Senate on July 16 as the 12th administrator of NASA. Lori Beth Garver was confirmed as NASA's deputy administrator. As administrator, Bolden will lead the agency and manage its resources to advance the agency's missions and goals.

"It is an honor to have been nominated by President Obama and confirmed by the Senate to lead this great NASA team," Bolden said. "Today, we have to choose. Either we can invest in building on our hard-earned world technological leadership, or we can abandon this commitment, ceding it to other nations who are working diligently to push the frontiers of space."

Bolden's confirmation marks the beginning of his second stint with NASA. His 34-year career with the Marine Corps included 14 years as a member of NASA's Astronaut Office. After joining the office in 1980, he traveled to orbit four times aboard the space shuttle between 1986 and 1994, commanding two of the missions. His flights included

> **"If we choose to lead, we must build on our investment in the International Space Station, accelerate development of our next-generation launch systems to enable expansion of human exploration, enhance NASA's capability to study Earth's environment, lead space science to new achievements, continue cutting-edge aeronautics research, support the innovation of American entrepreneurs, and inspire a rising generation of boys and girls to seek careers in science, technology, engineering and math," Bolden said.**

deployment of the Hubble Space Telescope and the first joint U.S.-Russian shuttle mission, which featured a cosmonaut as a member of his crew.

During his astronaut career, Bolden also drew technical assignments as the Astronaut Office safety officer; technical assistant to the director of Flight Crew Operations; special assistant to the director of Johnson Space Center; chief of the Safety Division at JSC (overseeing safety efforts for the Return to Flight after the 1986 *Challenger* accident); lead astronaut for vehicle test and checkout at the Kennedy Space Center; and assistant deputy administrator at NASA Headquarters. He was inducted into the U.S. Astronaut Hall of Fame in May 2006.

Like Bolden, Garver's confirmation as deputy administrator marks the second time she has worked for NASA. Her first stint at the agency was from 1996 to 2001. Initially, she served as a special assistant to the NASA administrator and senior policy analyst for the Office of Policy and Plans before becoming the associate administrator of that same office.

As deputy administrator, Garver will be NASA's second in command. She is responsible to the administrator for providing overall leadership, planning and policy direction for the agency. Garver will represent

NASA/PHOTO 200907080004HQ

NASA Administrator Charlie Bolden and Deputy Administrator Lori Garver speak with Congress at their confirmation hearings.

NASA to the Executive Office of the President, Congress, heads of government agencies, international organizations, external organizations and communities. She will also oversee the work of NASA's functional offices, including the Office of the Chief Financial Officer, Office of General Counsel and Office of Strategic Communications.

A 48-year-old Michigan native, Garver earned a bachelor's degree in political science and economics from Colorado College in 1983. Her focus immediately turned to space when she accepted a job working for Sen. John Glenn from 1983 to 1984. She has since served in a variety of senior roles in the nonprofit, government and commercial sectors.

For a detailed biography of Bolden, visit:
http://www.nasa.gov/about/highlights/bolden_bio.html

For a detailed biography of Garver, visit:
http://www.nasa.gov/about/highlights/garver_bio.html

NASA/MARKOWITZ jsc2009e147674

On July 24, NASA Administrator Charlie Bolden and JSC Director Mike Coats spoke with JSC team members about NASA's future plans.

High School Aerospace Scholars **celebrates 10 years**

By Jenna Maddix

Though NASA has many successful educational and internship programs, there is one celebrating its 10-year anniversary this summer.

High School Aerospace Scholars (HAS) started in 1999, created through a partnership with the state of Texas and Johnson Space Center. Both entities felt the students of Texas needed more motivation to enter the technical workforce. In utilizing the human spaceflight angle, HAS was formed.

"HAS provides much more than just an introduction to NASA's mission and purpose," said Cody Kelly, a JSC co-op and 2005 HAS alumni who is studying aerospace engineering at Texas A&M University. "HAS proves through action that NASA is not only in the exploration business, but the 'inspiration' business."

NASA/PHOTO

A view of High School Aerospace Scholars students working on a project to construct a Mars Rover in the Gilruth Center at JSC.

Though it would top many kids' lists to spend a week at NASA working on a project related to NASA's mission, HAS is only open to Texas residents. Eligible students must be U.S. citizens, in their junior year of high school, have an interest in science, technology, engineering or mathematics and be committed to a one-year relationship with JSC.

Interested students apply and are nominated by their state legislators to participate. In December, they are notified of their acceptance. However, before the students get to the six-day experience at JSC, they must first complete 10 Web-based activities that include essays, quizzes, reading, solving problems, and a few challenging ones such as designing a graphic of a lunar base or Mars colony. A new lesson is due every two weeks and, once completed, graded by a Texas-certified teacher.

The goal for each student is to succeed at all the Web-based assignments so that they will be invited to spend an entire week at JSC, at no cost, with other students to work on a team project in Mars exploration. The students attending are eligible to apply for a one-year science elective from their high schools. Also included in the package is guidance with a NASA mentor, briefings by astronauts and engineers and a tour of JSC facilities.

"Seeing the vision become a reality and using human spaceflight as the inspiration for these students to pursue science, technology, engineering and mathematic degrees and careers is very exciting and rewarding," said Linda Smith, Education specialist and Texas Aerospace Scholars Program manager.

To date, 4,096 students have been nominated by their legislators, and 2,129 have participated. This summer, 355 earned the opportunity to come to JSC for the weeklong residential experience.

"HAS is a proven model, but each year we update and revise to keep it fresh and aligned with the space program," Smith said.

So what does the future hold for HAS? According to Smith, the hope is to expand to other states, as JSC has reached the maximum number of weeks the program can be offered each summer. Currently, replicas of HAS are being offered in Washington at the Museum of Flight and in Virginia by NASA Langley Research Center and the Virginia Space Grant Consortium.

HAS also partners with the Houston Livestock Show and Rodeo and Rotary National Award for Space Achievement. It is under the umbrella of Texas Aerospace Scholars and was the impetus for Middle School Aerospace Scholars and Community College Aerospace Scholars, all supporting the goal of an increased technical workforce in the state. For more information about HAS and related programs, visit: http://aerospacescholars.jsc.nasa.gov/

NASA/PHOTO

A High School Aerospace Scholars student and NASA/Houston Rocket Club volunteer prepare to launch a rocket at the Antenna Test Range outside Building 14.

By Donna P. Anderson

Transformations: JSC Mentorships in 2009

"Always in motion is the future." – Yoda

Transformations

Rotation, reflection, translation. All are key transformations of geometric proportions, but each can easily be applied terms in the human process of mentoring. Launched this summer, the new Johnson Space Center Mentoring Program features "more involvement centerwide by establishing a role for organizational mentoring advocates," said Dianne Stokes, deputy manager, Human Resources (HR) Development Office.

Making Forward Motion

"This program sets up a solid foundation for a successful mentoring relationship through a more strategic matching approach," Stokes said.

Working in tandem, "JSC HR and the Innovation and Inclusion Engagement Team together enhanced existing mentoring efforts," said Tamsin Abotteen, HR development specialist. This work translated into researching several other successful mentoring programs and adopting recommendations for change to the JSC program.

A higher profile was the first step toward the transformation of the program.

"An exciting marketing campaign was deployed. The focus of the campaign was to (create awareness), recruit mentors and protégés and show employees the center's commitment to personal and professional development," Abotteen said.

The new program puts a twist on the former by changing the matching process and offering a structure that guides mentors and protégés through a one-year mentoring cycle from start to finish. This helps participants maximize the benefits of a mentoring relationship. According to Abotteen, the matching process will be conducted by a panel that will look at aligning the protégé needs with the mentor's skill sets to optimize the mentoring experience.

A formal kick-off is slated for later this month, and the year-long program includes quarterly check-in requirements for all parties involved.

"Through feedback from both the mentors and the protégés, the measure of success will be if their objectives are met through the year-long relationship," Stokes said. "The response has been very positive and high energy."

"By checking with the participants at least quarterly to ensure the program is meeting their needs and expectations, we can make sure they feel like they are on the path to meeting their goals and objectives. Another measurement will be through participant evaluations and success stories," Abotteen said.

The Future

While this summer's program is open to civil servants only, there is consideration being given to creating other mentoring opportunities that would include contractor employees. To learn more about the JSC Mentoring Program, visit: http://mentoring.jsc.nasa.gov/

Sixth time's the charm

NASA/PHOTOS sts127-s-037 sts127-s-038

On July 15, the eve of the 40th anniversary of the launch of the Apollo 11 journey to the moon, Space Shuttle *Endeavour* blasted off at 5:03 p.m. CDT from the Kennedy Space Center in Florida.

The first two liftoff attempts in June were unsuccessful due to the discovery of a hydrogen leak in the external tank. The subsequent third, fourth and fifth attempts were foiled by thunderstorms churned by Mother Nature. However, the sixth time did prove to be the charm, and *Endeavour* was able to rocket to the International Space Station for a 16-day mission packed with spacewalks, robotics work, science experiments and the assembly of the Japanese segment to the orbital outpost. The "porch" for the space station will be used to expose science experiments to the extreme space environment.

The STS-127 crew included Commander Mark Polansky, Pilot Doug Hurley, Mission Specialists Chris Cassidy, Tom Marshburn, Dave Wolf, Tim Kopra and Julie Payette of the Canadian Space Agency.

The mission also helped the space program reach a new milestone with the most humans in orbit at the same time—13—which included the residents aboard station while the shuttle was in orbit: Commander Gennady Padalka and Flight Engineers Michael Barratt, Koichi Wakata of the Japan Aerospace Exploration Agency, Roman Romanenko, Robert Thirsk of the Canadian Space Agency and Frank De Winne of the European Space Agency.

constellati

Writing the History Books of Tomorrow

NASA conducted its first Pad Abort test 50 years ago this summer for Project Mercury. Later this year, the Orion Project continues the legacy with its first flight test, Pad Abort 1.

The Orion Pad Abort 1 test is the first in a series of up to five launch-abort system flight tests that will help us ensure crew safety during Orion's launch. It will focus on the ability of Orion's launch abort system to pull the crew safely away from the Ares launch vehicle in the event of a problem on the launch pad or anytime during the first stage of the Ares rocket ascent to Earth orbit.

According to Don Reed, manager of the Orion Flight Test Office, the flight test is an important milestone not only to the program, but an important demonstration of our progress for the public.

NASA/PHOTO JSC2009E118035

The Orion jettison motor arrives at the White Sands Missile Range in New Mexico for the first test of the launch-abort system, called Pad Abort 1. Built by Aerojet, Orion's abort system was shipped from Sacramento, Calif. It will be capable of pulling the crew module away from the Ares 1 crew launch vehicle within milliseconds in the event of an emergency on the pad or during the initial ascent phase.

"So much of what we do is shown in the hardware and products, and that's what we are delivering. It is important that the American people understand we are actually building hardware and testing it," Reed said.

In addition to testing crew safety systems, Pad Abort 1 will demonstrate new systems integration and ground operations procedures

NASA/MSFC

Jeremy Rousseau, deputy for Launch Abort Motor at Marshall Space Flight Center, speaks to a group of onlookers shortly after NASA's Orion launch-abort system pathfinder arrives at the Adventure Science Center in Nashville, Tenn., for a short visit. The hardware traveled cross-country to White Sands Missile Range in New Mexico, where it will be used for Pad Abort 1 flight test.

that will be used to prepare for Orion's journeys to space.

"This is really the first systems-level flight test the Orion Project is going to partake in. Our team is the first to do a lot of things from a process standpoint," Reed said.

These flight tests, along with other ground tests, will help managers certify Orion's launch abort system for spaceflight. Orion is due to launch to the International Space Station by 2015.

"I always remind our staff that we are making history," Reed said. "All of the effort we are putting into this now is writing the history books (for tomorrow)."

A Preliminary Design for a Legacy Vehicle

This summer, the Constellation Program reaches a critical milestone in the development of the Orion Crew Exploration Vehicle: the Preliminary Design Review (PDR).

The PDR is one of a series of reviews that occurs before actual flight hardware can be built. Orion's PDR will evaluate the design of the vehicle with three types of missions in mind: crewed flights to the International Space Station, weeklong missions to the moon and missions to the moon for up to 210 days.

"It's a very big accomplishment and the culmination of all of the design trade studies and activities which we've completed to date," said Mark Geyer, manager of the Orion Project Office. "As a project and an agency, we are reviewing the architecture of NASA's next human spacecraft and agreeing that this is the architecture we are going to go build."

The PDR will include more than 1,600 reviewers from 10 NASA field centers to evaluate the hundreds of design products delivered by the Lockheed Martin-led industry partnership.

NASA/PHOTO JSC2009E114998

The steel gantry poised on the Orion launch pad at White Sands Missile Range stands nearly 134 feet high. It will support a thermal cover surrounding the launch-abort system before the Pad Abort 1 test, as well as structural support for future ascent abort tests.

ion

By Sean Elizabeth Wilson

NASA/PHOTO ED09-0102-718

The Orion shaker test was completed at Dryden Flight Research Center. The test measures the vehicle at different frequencies to ensure the vehicle test correlates with the loads and dynamics math models.

"The review itself is an agencywide evaluation of the project," said Mark Kirasich, deputy manager of the Orion Project. "We are getting the best of the agency's expertise to look at this design."

Teams representing each subsystem of Orion conducted focused reviews that wrapped up at the beginning of July before proceeding to the vehicle PDR. The vehicle PDR was formally initiated by the seven-day-long System and Module Review, which began July 13.

"We were originally scheduled to do the PDR last fall, but it was important to us to take some extra time to improve a few subsystems on the vehicle," Geyer said.

The PDR board, set for Aug. 21, is the final step of the Orion review process. The outcome from the review board establishes the technical basis for proceeding with the detailed design of Orion. NASA will continue the process with an independent agency review to validate the PDR results with formal agency approval to transition the project into the next life cycle phase.

"We want this to be a legacy vehicle," Kirasich said. "A vehicle that the project, the agency and the country can be proud of."

Pathfinding for Orion Flight Hardware

Engineers at Michoud Assembly Facility in New Orleans are paving the way for the first flight hardware for Orion's crew module with the development of a flight-like Ground Test Article (GTA).

"The GTA is the first piece of major flight-like structure we are designing and building on Orion," said Richard Harris, Lockheed Martin Orion deputy program manager for Production Operations. "Its structure is using the tooling and production processes we will use to build flight articles."

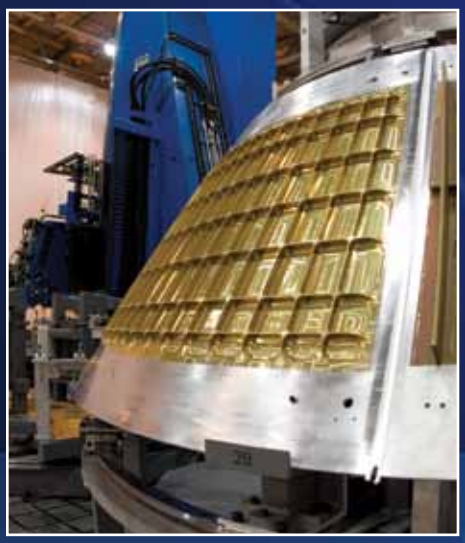
When completed, this first full-sized, flight-like crew module will be tested on the ground in equivalent flight-like environments, including

NASA/LOCKHEED MARTIN

Orion prime contractor, Lockheed Martin, continues construction of the Ground Test Article at the NASA Michoud Assembly Facility in New Orleans.

static, acoustics and water-landing loads. Results will be used to correlate sizing models for all subsystems on the vehicle.

While this novel hardware allows the team to exercise engineering and design processes, the benefits don't stop there. The Orion GTA will serve as a major risk-reduction test article in the development of design environments early



NASA/PHOTO

The first friction stir weld on the Orion Ground Test Article, performed by Lockheed Martin in New Orleans, La., on April 16.

in the program.

"Not only do we get a nice test article to see how the vehicle responds to space environments, we are also exercising design and manufacturing processes as a pathfinder to validate the flight vehicle production processes and tools," Harris said. "This is not only a risk reduction to engineering development process, but also to the production side of the program."

In addition, the team is selecting vendors that will build the flight hardware that contributes to risk reduction in the supply chain.

With the crew module test article manufacturing underway, plans are in progress to build service module and launch-abort system structures, too. This hardware is made of more composite materials than the crew module, enabling engineers to learn a lot from a composite manufacturing standpoint.

"We are discovering new things every day, but on a test article rather than on an actual flight vehicle," Harris said.

The Orion GTA will be completed next spring. Following weld operations currently underway at Michoud Assembly Facility, the structure will undergo mechanical assembly, integration and acceptance testing in New Orleans, environmental testing in Denver and drop-testing at Langley Research Center.

A family affair

by Victor Scott

Working with his family by his side in the blistering hot cotton fields of West Texas in the summer of 1974, Jose Lopez knew there was a better way of life for his family and was determined to find it. He took a leap of faith and headed to Houston, where eventually he landed a temporary job at Johnson Space Center. Twenty-six years later he still works at JSC, along with sons Rudy and Joe and grandson Joseph—three generations of support for NASA.

Rudy and Joseph both work at the Sonny Carter Training Facility in the Neutral Buoyancy Laboratory (NBL). Rudy is the lead test director, and his son Joseph is a reconfiguration diver. Both support the Mission Operations Directorate.

Jose and son Joe support the Engineering Directorate. Jose is an electrical instrumentation technician, and Joe is a Shuttle Crew Escape Laboratory manager.

"I love what I do," said the eldest Lopez, "but the best part of my job is having my sons and grandson out here."

The origins of this family affair with America's space program can be traced back to the early days of NASA.

"I always liked the space program," Jose said. "When I was 10 or 12 years old, I used to read comic books. They had one called 'Space King.' He dressed as a cowboy and flew out in space."

Ironically, maintaining the vacuum chambers used to test spacesuits and flight hardware is now part of Jose's main responsibilities.

Rudy smiled as he shared the story of his journey to JSC. In high school, he was a member of the dive team and loved being in the water. But after graduation, his focus changed, and he ended up working in construction. The instability of construction work forced him to look for a more stable job to support his young family. Rudy turned to his father for guidance. Remembering his son's love for the water, Jose mentioned a job opening at the Weightless Environment Training Facility. Rudy landed the job at the giant swimming pool, which was the predecessor to the NBL.

"It was great that I was going to get paid to swim around in a pool," Rudy said.

Joseph remembers watching his father Rudy working in the enormous pools when he was a boy. "You get paid to do this?" Joseph had asked his father. "When I get older, I want to work here."

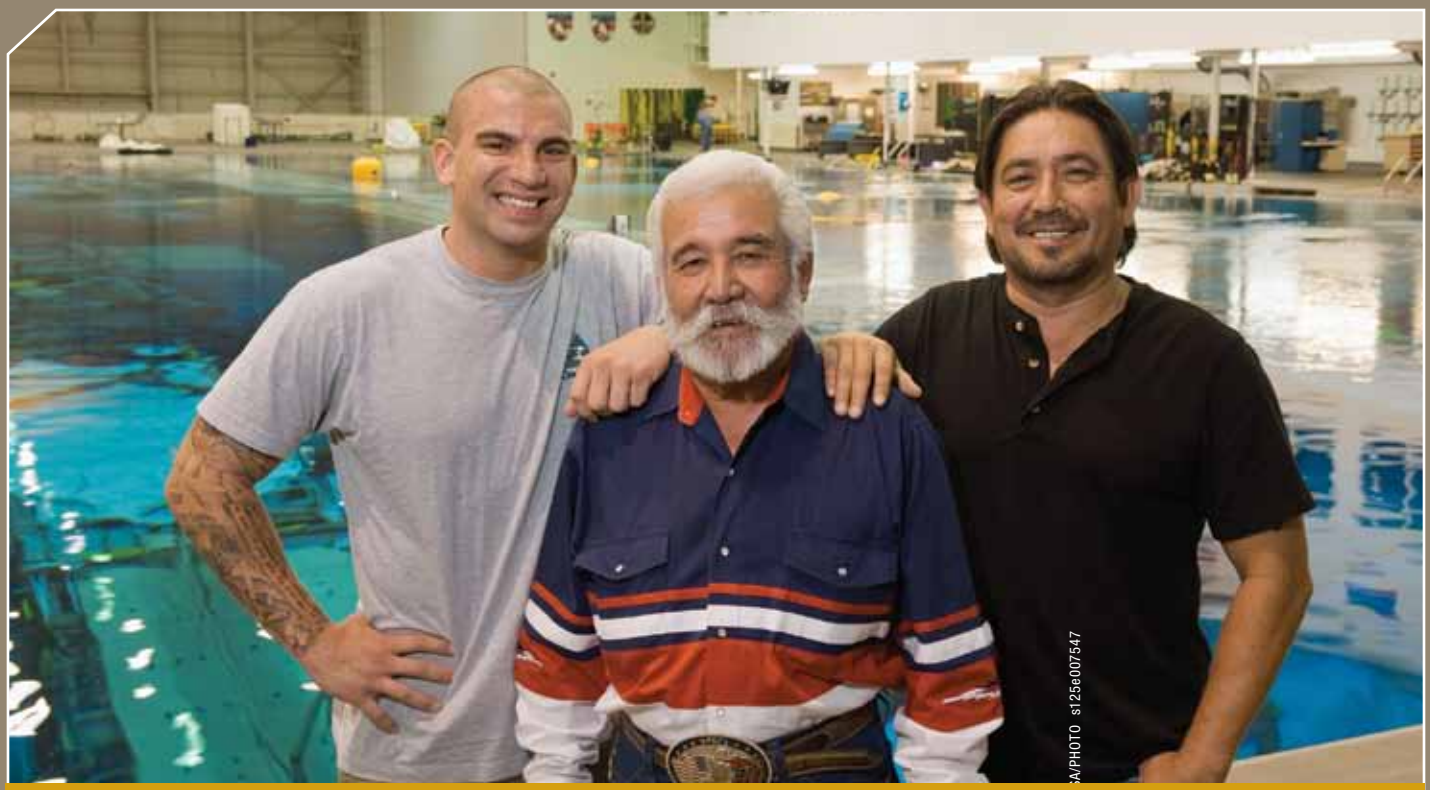
And in 2002, he became the third generation of Lopezes to work at JSC.

Each Lopez family member is proud of the work they do.

"I'm most proud of how safe we are," Rudy said. "Everybody goes home the same way they came in."

Jose added, "I'm proud of my sons and grandson and how they are contributing to the space program. I never dreamed that I would see this."

Grandson Joseph hopes the tradition will continue. "I hope that one day when I have kids and tell my son or daughter what I do for a living, they'll get interested and it'll just keep going."



NASA/BLAIR JSC2009E138601

Joseph Lopez (left), Jose V. Lopez (middle) and Rudy Lopez (right)—three generations of NASA support.

Where **math** meets **science**

By Neesha Hosein

The function of the Cost Estimating and Assessment Office at Johnson Space Center is more than just number-crunching. A series of teams use a unique form of financial planning art and science to support the center's projects and programs.

What Do Cost Estimators Do?

Cost estimators help create a financial map that organizations can follow to formulate a plan of affordability for program objectives.

Local and nationwide research, fact-finding, software programs, interpersonal communication and good old-fashioned number-crunching are among the tools cost estimators use. These tools combined enable cost estimators to help customers who charter their help.

"What we do is provide an independent cost-estimating and assessment function to the organizations across the center," said Jesse Contreras, manager, Cost Estimating and Assessment Office. "We do that for new and ongoing programs."

Contreras explained that the customer is actually a program in some cases—for instance, the Constellation and Altair projects.

Altair: an Example of a Cost-estimating Project

In order to begin formulating an estimate, the customer is asked to provide explicit details about the project. For instance, Vicki Gutierrez, cost estimator, provides estimates for Altair and the lunar lander.

"They must paint a picture of the structure and function of the vessel," Gutierrez said. "I ask for a picture and diagram. I ask for the component list for that element, all the way down to the parts, and then I just start talking to the engineers specifically for that component."

Analyzing the specific parts and components, Gutierrez is able to tell how much it would cost to design and test that piece of hardware.

Part of the science to cost estimating includes factoring in as much data from project managers, leads and engineers around the country as possible.

Calculation and Research

Once the input and cost estimates for all the major hardware, operations, software elements and production elements are calculated, the final probability values can be better determined.

"If we hypothetically have a 50 percent chance that we can afford the program and a 50 percent chance we can launch on time, as a rule of thumb there (is) about a 25 percent chance I can do both," said Steve Wilson, Constellation Program analyst. "There are many factors that figure into the determination of the final probability value."

What the Customer Gets

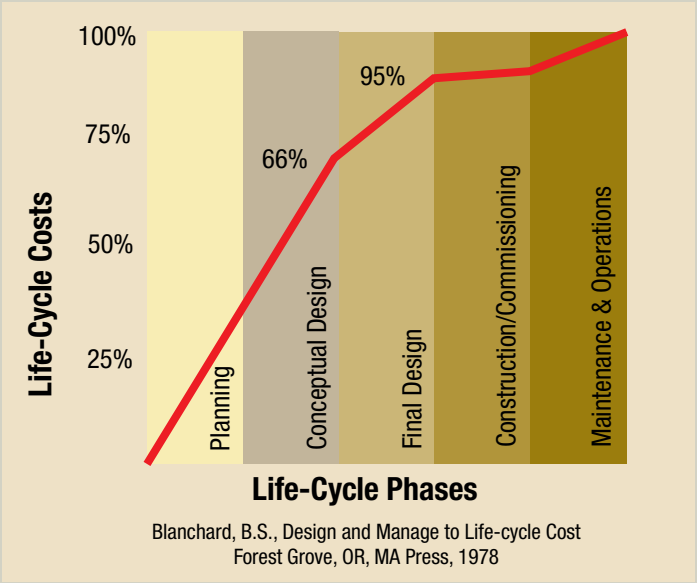
The product to the customer is an estimate for each component of design development, test and evaluation, production and operations. Gutierrez said customers can also use the estimate to determine where cost-cutting is possible.

"I work on an analytical product called Joint Confidence Level (JCL)," Wilson said. "What JCL tells you is the probability that you can afford to launch Orion 2 on or before the target date. This is a new type of analysis that has never before been conducted at NASA or anywhere in the U.S. government."

Cost-estimation is a mathematical art and science that allows NASA to begin and expand on its incredible endeavors in space. Without the background financial work and budget magic, we would not have the capability to delve into the cosmos as we do now.

NASA/PHOTO

Experts in the field of cost estimating came together to form the Constellation Program Lunar Strategic Cost Analysis Team.



Blanchard, B.S., Design and Manage to Life-cycle Cost
Forest Grove, OR, MA Press, 1978

Decisions made early in the acquisition cycle profoundly affect the life-cycle cost. Even though expenditures may occur later during the acquisition process, cost is committed at an early stage. As shown, planning (including conceptual design) fixes two-thirds of the overall life-cycle costs. The ensuing design phase determines an additional 29 percent of the life-cycle costs, leaving only about five percent of the life-cycle costs that can be impacted by later phases.

Spotlight Dan Jackson

TITAN Flight Controller, Mission Operations Directorate

Q: Coolest part of your job?
A: The inspiration that comes from managing the International Space Station's cameras. As a Telemetry, Information Transfer and Attitude Navigation Flight Controller, I am permitted to operate on-orbit avionics hardware from three different disciplines, but the most fun equipment is by far the cameras because they let you take a good look at the Earth. After seeing those Earth views, I can understand why some crew members list seeing the Earth as one of the high points of their mission.

NASA/HARNETT JSC2009E142824

Q: What would you be doing if you weren't in your current job at Johnson Space Center?
A: I would be an author. In my spare time I write, but I've never been published. I sent one story off that I believed was worth publishing and it has been rejected 48 times. If you are not humble when you begin as an author, you certainly are by the time the first book gets accepted.

Q: What would people be surprised to know about you?
A: Before I earned the privilege of working here at NASA, I was a pinball machine and jukebox mechanic. In those days, to escape the outright despair that goes along with a job that required steady bar-hopping to fix broken machines, I would imagine what it would be like to work at NASA. The happy ending in that stage of my career is that actually working here is many times better than I could imagine.

Q: What is your favorite quote or motto?
A: "Failure is not an option." – Gene Kranz

Q: What is your favorite food?
A: Fried chicken.

Q: What is your favorite sport?
A: I am consumed by football. To me, all the other sports are simply meant to bide your time because you can't raise a team to play or watch football.

Q: Favorite movie and why?
A: "Secondhand Lions" with Michael Caine, Robert Duvall and Haley Joel Osment. When that lion dies trying to defend that kid, and the kid looks up from the ground with the lion's head laying in his lap and asks, "She was a real lion, wasn't she?"… Well, I don't ask people to watch that movie with me because of that scene.

Q: Favorite music, artist or band and why?
A: Harry Chapin is my favorite musical artist, mostly because he always tried to convert his fame into some way to help the less fortunate. I like nearly every song he wrote, but especially like the love story between Harry and Sue that he describes in "Taxi" and "Sequel." At his concerts, when the crowd would try to sing along at his invitation, he would offer up comical critiques like, "You sound like 3,000 munchkins and a troll."

Q: What is a quality you most admire in people?
A: Anyone who comes here can see that each of us has taken up our part of something that is bigger than any of us. I have the utmost respect for those that humble themselves to the mission, realizing that there will be personal sacrifice because of it, and still not turn away from it.

Q: What is your best memory at NASA or JSC in particular?
A: I was on duty on Sept. 11, 2001. I got off duty that morning, as the tragedy was unfolding. By the time I returned that night, the Flight Control Team had completely and effectively hidden the International Space Station Mission Control operation in an alternate building. Before I could get to sleep that day, I received a phone call giving me the option to stay home if I wanted, but I was revolted by such an offer. My place was at Johnson Space Center—with the mission. I cannot express the pride and sense of belonging I experienced when I returned for duty that night (after finding the place) and saw that every one of the flight controllers I had served with the night before had returned for duty.

NASA/PHOTO

WANTED!

Do you know a JSC colleague or team that does something extraordinary on or off the job? Whether it's a unique skill, interesting work, special professional accomplishment, remarkable second career, hobby or volunteerism, your nominee(s) may deserve the spotlight!

The Roundup shines the light on one special person or team each month, chosen from a cross section of the JSC workforce. To suggest "Spotlight" candidates, send your nomination to the JSC Roundup Office mailbox at jsc-roundup@mail.nasa.gov. Please include contact information and a brief description of why your nominee(s) should be considered.

Center Scoop

NASA/STAFFORD jsc2009e141001

SHOWING HOUSTON DYNAMO SPIRIT

On June 17, the Houston Dynamo soccer team visited Johnson Space Center and gave an autograph session in the Building 3 Starport Café for some lucky fans. Later, on June 20, JSC soccer enthusiasts were invited to watch the Houston Dynamo versus Real Salt Lake for a special NASA Night game.

NASA/STAFFORD jsc2009e141002

NASA/STAFFORD jsc2009e141047

AN INSPIRING DAY FOR OUR CHILDREN

Bring Our Children to Work Day allowed JSC team members the opportunity to inspire their kids to be the next generation of NASA workers.

This year's event celebrated the contributions that employees make to the JSC work environment, as well as NASA's plans to return to the moon. Speakers throughout the day further enhanced the children's space experience.

NASA/STAFFORD jsc2009e141081

NASA/STAFFORD jsc2009e140967

NASA'S SECOND ANNUAL GOLF TOURNAMENT

On June 22, JSC celebrated Apollo's 40th anniversary at the NASA Second Annual Golf Tournament. The tournament hosted 56 teams this year in a shotgun, four-person scramble at the Wildcat Golf Course. Starport was an integral part of many Apollo 40th anniversary events at the center and in the community.

NASA/PHOTO jsc2009e140930

Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Johnson Space Center, Houston, Texas, and is published by the Public Affairs Office for all Space Center employees.
The Roundup office is located at the Johnson Space Center, Building 2. The mail code is AP22. Visit our Web site at: http://www.jsc.nasa.gov/roundup/online/
For distribution questions or to suggest a story idea, send an e-mail to jsc-roundup@mail.nasa.gov.

Catherine E. Ragin Editor
Neesha Hosein Assistant Editor
Logan Goodson Graphic Designer
Laura A. Rochon NASA Publication Manager
Cassandra V. Miranda Contractor Publication Manager

And it was a 'Great Day Houston'

NASA/PHOTO JSC2009E141719

On June 10, the "Great Day Houston" TV show celebrated NASA's past, present and future with a full episode dedicated to Johnson Space Center. Host Deborah Duncan welcomed NASA representatives, including: Frank Hughes, retired NASA chief of Spaceflight Training; Michael Lutomski, former flight controller and current risk manager for the International Space Station Program; John B. Bacon, systems integrator for station; Elaine Stephens, NASA engineer; Steven Gonzalez, deputy of the Advanced Planning Office; and Larry Tosto, systems engineer for station.

Duncan asked the NASA guests to reflect on their beginnings at NASA and describe their hopes for the future of exploration. Duncan also highlighted technological innovations sparked by NASA research and spoke about her recent tour of JSC.

Deborah Duncan, host of the "Great Day Houston" TV show, takes a swig of recycled water that had previously been processed through the Urine Processing Assembly.